

Claims

[c1] 1. A device for releasing a volatile substance into an environment comprising:

- a housing having an interior region, an outer surface, and an opening, wherein the housing includes a volatile substance cartridge for containing a fluid therewithin;
- means for orienting the device such that gravity forces the volatile substance toward the opening; and
- means for controllably releasing a predetermined amount of the volatile substance from the housing toward and onto an emanator, wherein fluid in the housing is substantially protected from exposure to the outside environment.

[c2] 2. The device of claim 1, wherein the controlled release means has a first release and a second boost release of the volatile substance.

[c3] 3. The device of claim 1, wherein the housing and the controlled release means isolate the volatile substance from the outside air and substantially prevent loss of the volatile substance until and after a desired release.

- [c4] 4. The device of claim 1, wherein the housing, controlled release means and emanator can operate with large swings in temperature and pressure of the outside environment.
- [c5] 5. The device according to claim 1 wherein the controlled release mean further comprises a rotating manually operable valve for releasing a predetermined amount of fluid on to an emanator to be utilized over time into the surrounding environment.
- [c6] 6. The device according to Claim 1, further including means for protecting fluid in the reservoir from exposure to the outside environment.
- [c7] 7. The device according to claim 1 wherein the controlled release means comprises an electrically operated valve which releases predetermined amounts of the volatile substance to the emanator while isolating the remaining volatile substance in the housing from the outside environment such that there is substantially no loss of volatile substance until the valve is activated.
- [c8] 8. The device according to claim 1 wherein the device is used in automobiles, vehicles, airplanes, trains and other room spaces where large temperature and pressure swings exit.

- [c9] 9. The device according to claim 1 wherein the emanator is selected from the group consisting of porous plastic, cellulose pads, porous glass, ceramic pads, heated pads, piezo electric pads or ultrasonic pads, fans and combinations thereof.
- [c10] 10. The device according to claim 1 wherein the housing is constructed of a substantially rigid material having means for allowing air to fill the space when a predetermined amount of volatile substance controllably leaves the reservoir.
- [c11] 11. The device according to claim 1 wherein the housing comprises a flexible material
- [c12] 12. The device according to claim 1 wherein the volatile substance is selected from the group comprising fragrances, medicaments, insect repellents, cleaning chemicals and combination thereof.
- [c13] 13. The device according to claim 1 wherein the controller comprises a frame with a shuttle inside, the shuttle having a chamber with and a plurality of seals surrounding the shuttle, and a spring in contact with the shuttle for movement.
- [c14] 14. The device according to claim 1 wherein the shuttle

has a chamber for delivering a predetermined dose of the volatile substance to a discharge hole within the frame.

- [c15] 15. The device according to claim 1 wherein the controller comprises a rotating pin.
- [c16] 16. The device according to claim 15 wherein the rotating pin includes mechanical stops.
- [c17] 17. The device according to claim 15 wherein the rotating pin has a spring return.
- [c18] 18. The device according to claim 1 wherein the emanator further comprises a surface to receive the fluid, the surface being an absorbent pad.
- [c19] 19. The device according to claim 1 wherein the emanator further comprises a surface to receive the fluid, the surface being a hard surface.
- [c20] 20. The device according to claim 1 wherein the emanator is associated with a heating element for increasing volatilization.
- [c21] 21. The device according to claim 1 further comprising means for increasing airflow adjacent the emanator.
- [c22] 22. The device according to claim 1, wherein the car-

tridge is replaceable

23. The device according to claim 1, wherein the cartridge is refillable.

[c23] 24. A method of releasing a volatile substance into an outside environment comprising the steps of:

- storing a volatile substance in a reservoir;
- releasing a fixed dose of the volatile substance from the reservoir by a controller and the controller sealing the volatile substance from the outside environment until released; and
- collecting the fixed dose and vaporizing the fixed dose of the volatile substance into the outside environment by an emanator, the emanator positioned below the reservoir.

[c24] 25. The method of claim 24, wherein the step of releasing comprises the step of activating the controller from a first position to a fluid releasing position while preventing loss of the volatile substance until and after a desired release.

[c25] 26. The method of claim 24, wherein the step of activating is selected from the steps of manually or electronically activating.